

PENG ZHENG

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[🎓 Google Scholar](#) [🐙 github.com/ZhengPeng7](#) [🤖 huggingface.co/ZhengPeng7](#)

Education

University of Trento (UNITN) <i>Ph.D. Student in MHUG Group Led by Prof. Nicu Sebe</i>	2025 – present <i>Trento, Italy</i>
Aalto University <i>Master of Science in ICT Innovation (Visual Computing and Communication)</i>	2020 – 2023 <i>Espoo, Finland</i>
University of Trento (UNITN) <i>Master of Science in ICT Innovation (Visual Computing and Communication)</i>	2019 – 2023 <i>Trento, Italy</i>
Hebei Normal University (HeBTU) <i>Bachelor of Engineering in Software Engineering</i>	2015 – 2019 <i>Shijiazhuang, China</i>

Research Interests

- Computer Vision
- Image Segmentation
- Object Retrieval
- AI for Biology

Working Experience

Shanghai AI Lab <i>Research Assistant, in a AI4Science group led by Prof. Wanli Ouyang</i> <ul style="list-style-type: none">• Large Foundation Model for Multi-species Genomics Analysis.• Long context Foundation Model for Single-Cell WGBS Analysis with CpG Dependencies.	Aug.2023 – Oct.2025 <i>Shanghai, China</i>
Alibaba Group <i>AIR Research Intern, supervised by Prof. Deng-Ping Fan & Prof. Dehong Gao</i> <ul style="list-style-type: none">• Highly accurate segmentation for high-resolution image segmentation.	Feb.2023 – Aug.2023 <i>Hangzhou, China</i>
Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) <i>Research Assistant, supervised by Prof. Huan Xiong & Prof. Jie Qin & Prof. Deng-Ping Fan</i> <ul style="list-style-type: none">• Co-Salient Object Detection with Contrastive Memory and adversarial learning.	Jan.2022 – Sep.2022 <i>Abu Dhabi, UAE</i>
Inception Institute of Artificial Intelligence (IIAI), G42 <i>Research Intern, supervised by Prof. Jie Qin & Prof. Deng-Ping Fan</i> <ul style="list-style-type: none">• Co-Salient Object Detection with Group Collaboration.• Person Search with Context Information.	Mar.2021 – Jan.2022 <i>Abu Dhabi, UAE</i>
Computer Vision Lab, ETHZ <i>Graduate Student, remotely supervised by Prof. Xiaogang Cheng on his projects</i> <ul style="list-style-type: none">• Video Motion Magnification, [Code].	May.2019 – Jan.2021 <i>Remote</i>
School of EECS, KTH <i>Undergraduate Student, remotely supervised by Prof. Xiaogang Cheng on his projects</i> <ul style="list-style-type: none">• Leaf Vein Extraction on the Swedish Rare Cypress Poplar, [Code].• Visibility Detection in Foggy Highway, [Code-1], [Code-2].	Dec.2017 – April.2019 <i>Remote</i>

Selected Publications

Bilateral Reference for High-Resolution Dichotomous Image Segmentation

Peng Zheng, Dehong Gao, Deng-Ping Fan*, Li Liu, Jorma Laaksonen, Wanli Ouyang, Nicu Sebe
CAAI Artificial Intelligence Research (CAAI AIR) (2024), [\[Code\]](#)[\[HF Model \(20M+ DLs\)\]](#)[\[HF Demo\]](#)

GCoNet+: A Stronger Group Collaborative Co-Salient Object Detector

Peng Zheng⁺, Huazhu Fu⁺, Deng-Ping Fan*, Qi Fan, Jie Qin, Yu-Wing Tai, Chi-Keung Tang, Luc Van Gool
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI) 2023, [\[Code\]](#)[\[Demo\]](#)

Memory-Aided Contrastive Consensus Learning for Co-Salient Object Detection

Peng Zheng, Jie Qin*, Shuo Wang, Tianzhu Xiang, Huan Xiong
AAAI Conference on Artificial Intelligence (AAAI), 2023, [\[Code\]](#)

Efficient Person Search: An Anchor-Free Approach

Yichao Yan*, Jinpeng Li, Jie Qin*, Peng Zheng, Shengcai Liao, Xiaokang Yang
International Journal of Computer Vision (IJCV) (2023): 1573-1405, [\[Code\]](#)

MovieNet-PS: A Large-Scale Person Search Dataset in the Wild

Jie Qin, **Peng Zheng**, Yichao Yan*, Quan Rong*, Xiaogang Cheng, Bingbing Ni

IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023, [Code][Dataset]

Facial-sketch Synthesis: A New Challenge

Deng-Ping Fan, Ziling Huang, **Peng Zheng**, Hong Liu*, Xuebin Qin*, Luc Van Gool

Machine Intelligence Research (MIR) (2022), [Code][Dataset]

MTA-PS: Towards Practical Person Search in Videos

Tiancheng Ying, Rong Quan, **Peng Zheng**, Yichao Yan, Jie Qin*

International Conference on Image Processing (ICIP) (2024), [Code][Dataset]

scMRDR: A Scalable and Flexible Framework for Unpaired Single-Cell Multi-Omics Data Integration

Jianle Sun, Chaoqi Liang, Ran Wei, **Peng Zheng**, Lei Bai, Wanli Ouyang, Hongliang Yan, Peng Ye

Annual Conference on Neural Information Processing Systems (NeurIPS) (2025), [Code]

scWGBS-GPT: A Foundation Model for Capturing Long-Range CpG Dependencies in Single-Cell Whole-Genome Bisulfite Sequencing to Enhance Epigenetic Analysis

Chaoqi Liang⁺, Peng Ye⁺, Hongliang Yan⁺, **Peng Zheng**⁺, ... et al.

bioRxiv (2025), [Code]

Genomics-FM: Universal Foundation Model for Versatile and Data-Efficient Functional Genomic Analysis

Peng Ye, Weiqiang Bai, ..., **Peng Zheng**, ... et al.

bioRxiv (2024), [Code]

Patents

Vein Extraction Algorithm for Improving Canny Operator Based on Window Dynamic Threshold

Peng Zheng, Xiaogang Cheng, Zhaohui Zhang

Publication Number CN109325498B, Application Date: 2018.07.26, Authorization Date: 2022.02.25, [Code]

Cooperations

On the **BiRefNet** project: **FAL** (\$60k GPU resource), **Freepik** (\$25k GPU resource), **Vuuh** (\$10k GPU resource), **Redmond.ai** (\$10k GPU resource), and **Artkive** (consulting).

Academic Services

Reviewer of Journals:

T-PAMI (2022-), IJCV (2023-), TIP (2023-), PR (2023-), CVIU (2022-), TVCJ (2021-), etc.

Reviewer of Conferences:

CVPR (2023-), ICCV (2025-), ECCV (2024-), NeurIPS (2025-), AAAI (2023-), etc.

Awards

Non-EU Merit Nomination Scholarship from EIT Digital.

Outstanding undergraduate thesis.

Major scholarship for every year in undergraduate years.

National Mathematical Modeling Competition Award Provincial Second Prize.

Skills

Languages: Chinese (native), English (fluent, IELTS 7.0, more than 4 years in Europe and UAE).

Programming: Python, PyTorch, MATLAB, Keras, OpenCV, etc.

Tools: Linux, L^AT_EX, Inkscape, Git etc.

About

Initialization: Luckily born in 1998.01.08, Yancheng, Jiangsu.

Hobbies: Boating, Reading (Kafka, D.H. Lawrence, Murakami), StarCraft, Go (Weiqi).

Aspiration: Scientist in Vision & AI, a Visioneer (Vision Pioneer) someday.

Traits: Tend to find novel and interesting things, both in daily life and research; love to share and help.